

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: LUMARK

Report Number: P196322

Luminaire Tested: **NAV-AF-02-D-UNV-T3R-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196322  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-02-D-UNV-T3R-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8350.3 lumens  
Efficiency: N/A  
Efficacy: 126.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type III - Medium - Full Cutoff  
BUG Rating: B1 - U0 - G2

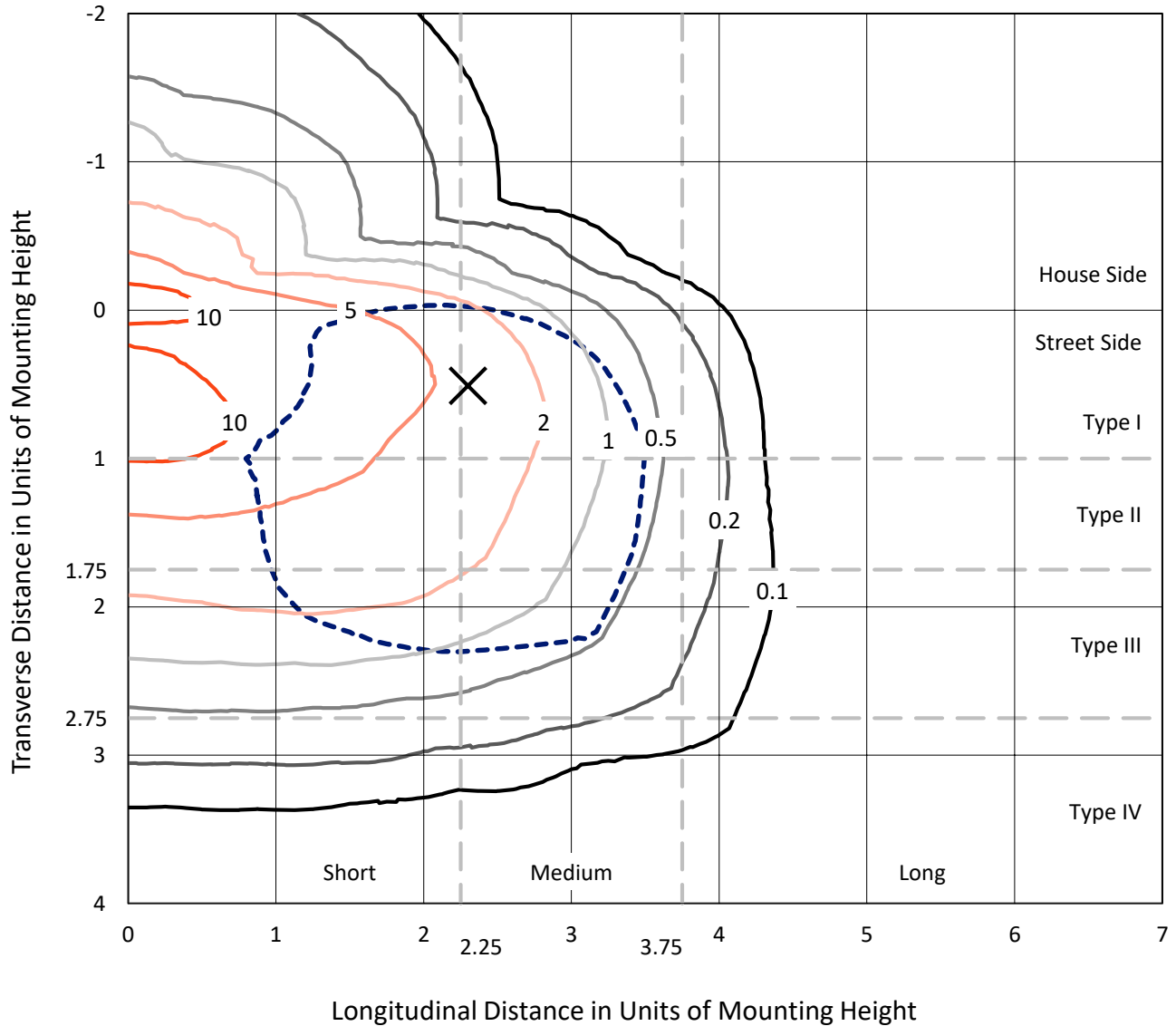
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P196322  
 CATALOG NUMBER: NAV-AF-02-D-UNV-T3R-600

### Iso-Footcandle Lines of Horizontal Illumination

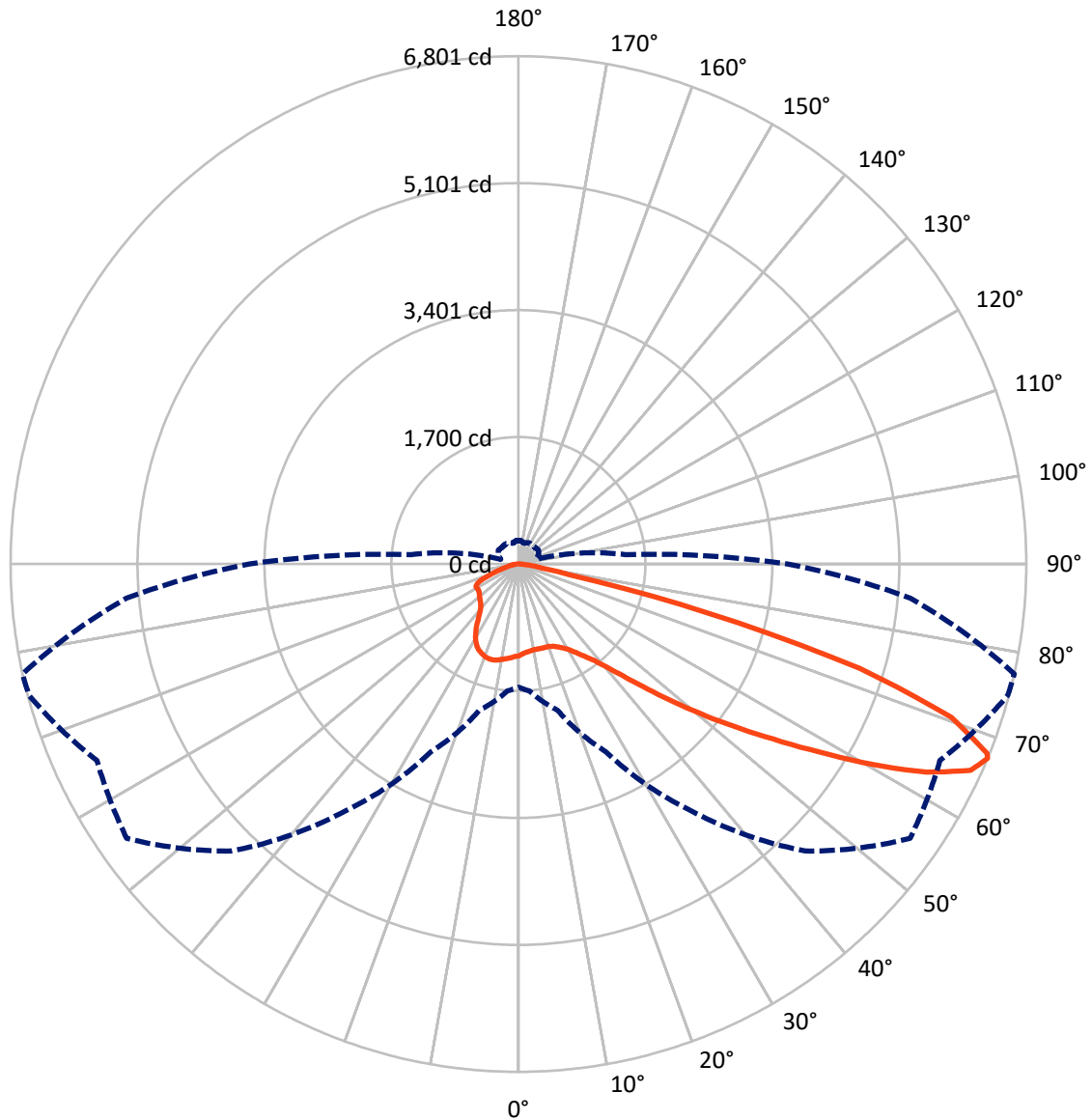
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.8 fc  
 Type III - Medium - Full Cutoff

REPORT NUMBER: P196322  
CATALOG NUMBER: NAV-AF-02-D-UNV-T3R-600

### Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral    - - - Horizontal Cone Through 67-Deg Vertical

REPORT NUMBER: P196322

CATALOG NUMBER: NAV-AF-02-D-UNV-T3R-600

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1435.0	0.0	1435.0
	% Fixture	17.2	0.0	17.2
<b>Street Side</b>	Lumens	6915.3	0.0	6915.3
	% Fixture	82.8	0.0	82.8
<b>Total</b>	Lumens	8350.3	0.0	8350.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.5	1.3
10°-20°	303.1	3.6
20°-30°	515.0	6.2
30°-40°	823.9	9.9
40°-50°	1268.5	15.2
50°-60°	1759.8	21.1
60°-70°	2347.5	28.1
70°-80°	1117.2	13.4
80°-90°	105.8	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	8350.3	100.0
0°-180°	8350.3	100.0



REPORT NUMBER: P196322

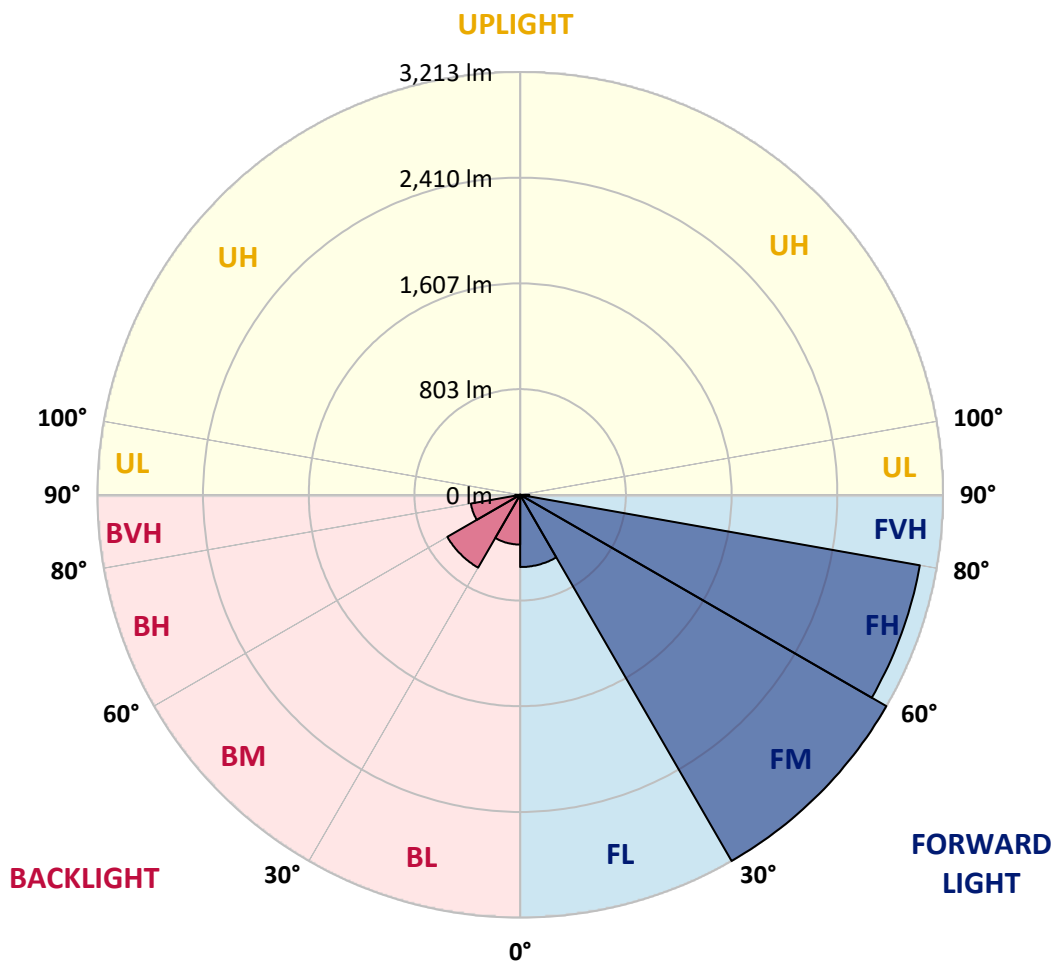
CATALOG NUMBER: NAV-AF-02-D-UNV-T3R-600

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	549.1	6.6			
FM	(30°-60°)	3213.3	38.5			
FH	(60°-80°)	3084.2	36.9			G2/5000
FVH	(80°-90°)	68.7	0.8			G1/100
BL	(0°-30°)	378.5	4.5	B1/500		
BM	(30°-60°)	638.9	7.7	B1/1000		
BH	(60°-80°)	380.5	4.6	B1/500		G1/500
BVH	(80°-90°)	37.1	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**

Type III Medium





REPORT NUMBER: P196322

CATALOG NUMBER: NAV-AF-02-D-UNV-T3R-600

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0
2.5°	1102.0	1107.1	1107.7	1122.6	1129.3	1146.3	1164.9	1181.5	1195.9	1201.0	1210.4
5°	991.5	991.5	993.1	1002.9	1021.9	1049.3	1088.0	1130.4	1174.8	1185.6	1212.9
7.5°	933.7	934.8	935.8	945.6	960.6	984.8	1023.6	1081.4	1155.1	1173.2	1221.2
10°	938.9	937.3	932.2	930.1	936.3	951.8	985.3	1044.6	1138.6	1166.5	1236.1
12.5°	1019.9	1016.8	999.8	975.0	952.3	946.6	969.9	1026.1	1130.9	1166.5	1261.5
15°	1158.8	1160.8	1127.3	1075.6	1016.3	976.0	972.9	1019.4	1128.3	1169.6	1290.9
17.5°	1339.5	1340.5	1294.0	1219.2	1120.5	1037.5	994.1	1019.4	1128.3	1172.7	1319.3
20°	1531.5	1524.2	1471.5	1377.6	1249.6	1122.6	1032.8	1025.6	1131.4	1177.3	1346.1
22.5°	1696.1	1689.4	1634.2	1535.6	1389.0	1223.2	1084.9	1046.3	1148.5	1196.4	1383.7
25°	1840.1	1844.2	1790.6	1679.6	1527.8	1336.8	1162.9	1093.7	1184.1	1231.0	1430.3
27.5°	2015.0	2007.3	1945.3	1839.6	1670.8	1454.5	1260.5	1153.6	1226.4	1272.9	1487.1
30°	2217.3	2213.8	2130.2	2021.2	1828.2	1586.1	1356.9	1218.1	1281.6	1330.1	1558.3
32.5°	2463.1	2462.5	2372.7	2239.0	2005.3	1734.8	1471.0	1306.4	1362.2	1411.2	1652.7
35°	2741.3	2740.8	2647.8	2471.3	2209.2	1899.4	1605.2	1413.7	1461.7	1513.4	1765.2
37.5°	2934.3	2931.2	2882.7	2711.3	2434.7	2090.9	1773.0	1558.3	1574.7	1632.6	1900.9
40°	2971.5	2990.1	3031.8	2930.7	2680.8	2303.6	1941.3	1713.6	1729.1	1803.5	2071.8
42.5°	2931.2	2955.5	3094.3	3122.7	2927.1	2561.2	2151.8	1928.9	1948.4	2040.9	2272.6
45°	2896.1	2917.3	3091.3	3229.0	3170.2	2842.0	2414.6	2191.6	2228.7	2343.3	2501.7
47.5°	2836.2	2855.9	3030.3	3248.2	3309.0	3112.4	2731.0	2507.5	2571.5	2710.3	2763.0
50°	2833.2	2842.0	2947.2	3184.1	3357.0	3317.8	3081.4	2877.0	2975.0	3135.1	3052.0
52.5°	2754.7	2816.1	2911.6	3081.9	3358.0	3437.5	3426.7	3282.2	3433.4	3610.5	3368.9
55°	2274.6	2345.4	2792.9	3031.8	3351.9	3540.2	3742.1	3713.2	3949.6	4135.9	3724.1
57.5°	2124.0	2153.9	2450.2	3046.9	3403.5	3710.0	4057.4	4176.2	4540.1	4743.4	4149.8
60°	2082.6	2114.1	2381.5	3054.0	3543.4	4019.3	4485.3	4699.0	5234.2	5450.0	4633.5
62.5°	2036.7	2077.5	2386.6	3060.8	3789.0	4476.5	5053.1	5266.3	5947.0	6139.5	5086.6
65°	1902.5	1956.7	2291.2	3018.4	4057.9	5050.5	5803.6	5857.8	6536.0	6658.3	5360.3
67°	1648.1	1707.4	2029.0	2773.8	4033.2	5437.1	6403.9	6227.8	6786.4	6801.3	5271.5
67.5°	1567.6	1628.9	1940.2	2672.2	3962.5	5487.7	6510.2	6279.0	6784.3	6767.7	5188.8
70°	1055.5	1124.7	1374.0	1961.9	3178.4	5107.3	6484.4	6121.5	6339.3	6149.9	4458.0
72.5°	523.9	526.0	685.5	1074.6	1925.7	3663.1	5409.3	5236.9	5138.8	4781.1	3271.4
75°	252.4	257.1	323.7	474.9	811.9	1891.1	3689.0	3533.6	3008.6	2605.0	1637.2
77.5°	192.5	197.1	251.3	309.1	338.6	616.8	1827.2	1476.7	871.8	696.3	461.5
80°	148.6	157.4	212.2	237.4	224.0	247.2	574.5	452.1	339.1	311.3	228.6
82.5°	116.1	121.3	180.1	180.1	154.9	165.7	267.4	261.2	210.6	190.0	122.9
85°	82.0	92.4	145.1	134.2	101.7	102.7	160.0	153.3	108.4	87.3	48.0
87.5°	36.6	47.0	103.2	87.8	54.2	41.8	65.6	56.3	42.9	33.0	22.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196322

CATALOG NUMBER: NAV-AF-02-D-UNV-T3R-600

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0	1229.0
2.5°	1220.7	1229.0	1241.9	1249.6	1260.0	1264.1	1268.2	1275.4	1281.0	1279.5	1276.9
5°	1232.0	1246.0	1262.0	1267.1	1267.1	1262.0	1258.8	1259.4	1257.8	1256.8	1253.7
7.5°	1248.6	1267.6	1279.0	1273.9	1257.8	1237.8	1218.6	1207.3	1196.4	1189.7	1191.8
10°	1271.8	1292.9	1293.5	1270.7	1232.6	1188.7	1151.0	1126.8	1103.6	1093.2	1096.3
12.5°	1305.4	1326.5	1308.5	1259.4	1192.4	1123.6	1054.5	1004.4	959.5	948.7	945.6
15°	1341.5	1358.0	1317.8	1235.1	1134.5	1021.4	905.3	830.5	780.4	771.6	768.5
17.5°	1373.0	1382.2	1313.1	1191.8	1043.1	865.1	729.9	679.2	668.9	674.1	674.1
20°	1400.8	1397.8	1292.9	1124.7	899.2	691.6	613.2	612.6	626.6	639.5	640.6
22.5°	1435.9	1411.7	1261.0	1025.1	727.2	577.0	563.6	577.0	592.5	607.0	608.6
25°	1477.8	1427.1	1218.1	883.1	584.8	523.9	529.6	540.9	550.8	562.1	562.6
27.5°	1519.6	1439.0	1157.7	716.4	507.4	489.8	496.0	500.6	503.3	510.5	510.5
30°	1568.1	1448.3	1070.5	574.0	471.8	459.9	456.2	454.2	456.2	466.1	466.6
32.5°	1628.9	1464.9	951.2	492.4	455.2	438.7	420.1	409.8	417.1	434.5	437.7
35°	1698.1	1484.4	808.3	459.9	449.6	428.4	394.3	378.3	380.9	396.9	399.5
37.5°	1784.8	1509.8	667.4	452.1	455.2	427.4	382.5	359.8	348.4	348.9	348.4
40°	1895.8	1535.0	555.9	454.2	467.6	429.9	376.8	341.2	317.4	318.4	320.5
42.5°	2011.9	1551.5	485.2	460.4	482.6	433.5	374.7	323.2	302.5	320.0	336.0
45°	2147.7	1546.9	448.6	466.1	494.0	435.2	366.9	321.0	304.0	356.7	386.6
47.5°	2303.6	1526.8	427.9	468.6	497.1	434.5	361.3	327.8	316.9	408.3	442.3
50°	2472.9	1495.2	411.3	464.5	495.5	432.5	367.5	336.0	322.1	419.6	445.9
52.5°	2658.1	1466.4	394.3	455.2	487.7	426.4	375.2	332.4	307.6	386.6	406.7
55°	2877.6	1459.6	375.2	439.3	474.9	419.6	371.1	321.0	291.6	342.7	355.1
57.5°	3128.4	1501.5	350.5	419.6	457.3	406.2	361.3	314.9	285.9	311.8	318.4
60°	3446.8	1593.9	324.2	399.0	435.7	386.1	352.5	316.4	287.4	307.1	308.6
62.5°	3695.6	1676.9	300.4	373.7	406.7	361.8	343.2	317.9	292.2	313.3	310.8
65°	3785.9	1636.2	271.0	336.0	365.9	335.0	330.3	319.0	292.2	316.9	311.3
67°	3600.7	1441.6	243.2	298.3	327.2	311.3	317.9	314.9	286.9	316.4	306.6
67.5°	3512.4	1373.0	235.9	292.2	316.9	304.0	314.9	312.8	285.4	315.4	304.0
70°	2896.6	984.8	199.3	245.2	265.3	267.9	295.7	299.4	273.0	296.2	275.6
72.5°	2060.9	616.3	171.9	190.0	214.2	229.1	270.0	281.3	256.6	257.6	240.5
75°	1019.9	330.8	153.3	146.6	166.7	191.0	235.4	256.6	232.3	214.7	209.1
77.5°	344.2	187.4	129.5	118.2	129.5	153.3	195.1	224.0	204.9	181.7	178.1
80°	178.1	136.3	101.2	94.9	102.2	118.8	152.8	186.3	174.9	176.0	145.1
82.5°	111.0	83.1	72.7	72.2	77.4	90.8	112.5	151.2	150.2	128.5	93.4
85°	51.7	48.0	46.4	48.0	49.5	51.7	73.2	107.9	114.1	69.2	61.4
87.5°	21.7	21.2	18.6	20.2	22.2	21.7	29.5	45.9	64.0	43.4	39.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)